

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 23-34 are presently pending in this case. New Claims 31-34 are added by the present amendment. As new Claims 31-34 are supported by the original disclosure,<sup>1</sup> no new matter is added.

In the outstanding Official Action, Claims 23-30 were rejected under 35 U.S.C. §103(a) as unpatentable over Li (U.S. Patent No. 6,654,429) in view of Khayrallah et al. (U.S. Patent No. 6,047,171, hereinafter "Khayrallah").

Applicants and Applicants' representatives thank Examiner Dean for the courtesy of the interview granted to Applicants' representatives on January 9, 2007. During the interview, differences between the claims and the cited references were discussed. Examiner Dean agreed that Li does not appear to describe "a filter configured to perform channel estimation for data symbols between pilot symbols" as recited in Claim 23.

With regard to the rejection of Claim 23 as unpatentable over Li in view of Khayrallah, that rejection is respectfully traversed.

Claim 23 recites in part:

a channel estimator configured to perform a channel estimation on the basis of received pilot symbols; and  
***a filter configured to perform a channel estimation for data symbols between pilot symbols***, said filter being selected from a set of filters based on an estimated carrier to interference ratio, said estimated carrier being a wanted carrier power value at a frequency subcarrier and a timeslot of a data symbol to be channel estimated, and said interference value is an interference reference value.

Li describes a channel estimator in an OFDM system, in which pilot symbols are inserted at known positions in the time-frequency space. The received signal is subjected to a

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<sup>1</sup>See, e.g., the specification at page 4, lines 29-34.

two-dimensional inverse Fourier transform, two-dimensional filtering, and a two-dimensional Fourier transform to recover the pilot symbols so as to estimate the channel response.<sup>2</sup> The outstanding Office Action cited diamond-shape filter 152 of Li as “a filter” as recited in Claim 23.<sup>3</sup> However, it is respectfully submitted that Li discloses only two options regarding estimation, one based on “the entire estimated demodulated signal”<sup>4</sup> and the other “using only the positions of the pilot symbols.”<sup>5</sup> Thus, it is respectfully submitted that diamond-shape filter 152 of Li is not configured to perform a channel estimation *for data symbols between pilot symbols* as recited in Claim 23. Therefore, Li does not teach or suggest “a filter” as defined in Claim 23. Further, it is respectfully submitted Khayrallah does not teach or suggest this feature either. Consequently, Claim 23 (and Claims 24-26, 33, and 34 dependent therefrom) is patentable over Li in view of Khayrallah.

Claim 27 recites in part:

*performing, by a filter, a channel estimation for data symbols between pilot symbols*, said filter being selected from a set of filters on the basis of an estimated carrier to interference ratio, the estimated carrier being a wanted carrier power value at a frequency subcarrier and a timeslot of a data symbol to be channel estimated, and said interference value is an interference reference value.

As noted above, it is respectfully submitted that Li discloses only two options regarding estimation, one based on “the entire estimated demodulated signal”<sup>6</sup> and the other “using only the positions of the pilot symbols.”<sup>7</sup> Thus, it is respectfully submitted that Li does not teach or suggest “performing, by a filter, a channel estimation *for data symbols between pilot symbols*” as recited in Claim 27. Further, it is respectfully submitted

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<sup>2</sup>See Li, abstract.

<sup>3</sup>See the outstanding Office Action at page 3, lines 5-7.

<sup>4</sup>See Li, column 6, lines 1-6.

<sup>5</sup>See Li, column 6, lines 10-15.

<sup>6</sup>See Li, column 6, lines 1-6.

<sup>7</sup>See Li, column 6, lines 10-15.

Khayrallah does not teach or suggest this feature either. Consequently, Claim 27 (and Claims 28-32 dependent therefrom) is also patentable over Li in view of Khayrallah.

New Claims 31-34 are supported at least by the specification at page 4, lines 29-34.

New Claims 31-34 are dependent on Claims 23 and 27, and thus are believed to be patentable for at least the reasons described above with respect to these claims. In addition, Claims 31-34 recite subject matter that further patentably defines over Li and Khayrallah.

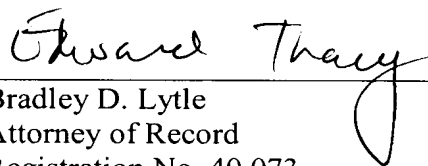
Consequently, Claims 31-34 are also patentable over Li in view of Khayrallah.

Accordingly, the pending claims are believed to be in condition for formal allowance.

An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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A handwritten signature in cursive script, appearing to read "Bradley D. Lytle", is written over a horizontal line.

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